

REMARKS

I. Status of the specification and claims

The original specification has been replaced with the substitute specification to correct the format of the specification and to include the section of cross-reference to related applications. The abstract has been amended to provide a general reaction scheme of the claimed process.

Claims 1-4 and 7-8 are currently pending. Claim 5-6 remain canceled. No claims have been amended.

No new matter has been added through these amendments.

Applicants request that the examiner enter these amendments. The amendments raise no new matter that would necessitate a new search. Additionally, the amendments present the objected specification and the rejected claims in condition for allowance or in better condition for appeal.

II. Specification Objection – Arrangement of the Specification

The examiner has made an objection to the specification as having an inappropriate format. The examiner advises to format the specification so that the letters of section headings appear in upper case, without underlining or bold type. Applicants acknowledged the examiner's advise. In this response, Applicants submit a substitute specification to correct the format of the specification.

In addition, the examiner particularly points out that sections (b-e) and (h) under 37 C.F.R. 1.77 (b) should be included and/or addressed in the specification. See page 4, Office Action. Regarding section (b), Applicants include, in the substitute specification, the section of cross-reference to related applications to claim priority of related foreign and international applications. In this regard, Applicants provide a markup version of the substitute specification and underline the added section. With regard to sections (c-e) and (h), 37 C.F.R. 177(a) provides "The elements of the application, if applicable, should appear in the following order:..." Applicants respectfully submit that sections (c-e) and (h) are not applicable to Applicants' invention, thus are not included in the specification.

Accordingly, Applicants respectfully request that this objection being withdrawn.

III. Specification Objection – Abstract

The examiner has made an objection to the abstract as not providing a general reaction scheme or exemplifying formulas of the recited compounds. In this regard, Applicants have amended the abstract to include a reaction scheme, having formulas of the recited compounds, to better describe the claimed process.

Accordingly, Applicants respectfully request that this objection being withdrawn.

IV. Claims Rejection under 35 U.S.C. § 103(a)

The examiner has rejected claims 1-4 and 7-8 under 35 U.S.C. § 103(a) as being unpatentable over JP 2002-293773 to Katsuyuki et al. (“Katsuyuki”) in view of WO 03/000188 to Wang et al. (“Wang”) and US 3,119,824 to Scarborough (“Scarborough”). According to the examiner, Katsuyuki teaches a process for preparation of 6,7-bis(2-methoxyethoxy)quinazolin-4-one, the process comprising four steps identical to the claimed process for preparation of 6,7-bis(2-methoxyethoxy)quinazolin-4-one. The examiner further states that because Katsuyuki teaches using ammonium formate as a formic acid compound and carboxylate source of ammonia base, and because Wang and Scarborough teach alternative agents in different steps of Katsuyuki’s process, it would have been obvious for a skilled artisan to combine the teachings of Katsuyuki, Wang and Scarborough to arrive at Applicants’ invention. Applicants respectfully traverse this rejection at least for the reasons advanced in detail below.

Applicants respectfully submit that independent claims 1-4 and the claims dependent therefrom, are patently distinguishable over Katsuyuki, Wang, and Scarborough, because Katsuyuki, Wang, and Scarborough, taken either alone or in combination, fail to disclose, teach or suggest all of the features recited in the pending claims.

Independent claims 1-4, reciting a process to prepare 6,7-bis(2-methoxyethoxy)quinazolin-4-one, all comprise a step of causing a reaction of ethyl 2-amino-4,5-bis(2-methoxyethoxy)-benzoate with an orthoformic ester in the presence of ammonium acetate. This step is referred to as “step 4” by the examiner. See Office Action, page 7.

The examiner states that the only difference between the claimed process and Katsuyuki’s process for preparation of 6,7-bis(2-methoxyethoxy)quinazolin-4-one is optimization of

experimental conditions. Applicants respectfully disagree with the examiner's statement. Although Katsuyuki teaches a step of preparation of 6,7-bis(2-methoxyethoxy)quinazolin-4-one from ethyl 2-amino-4,5-bis(2-methoxyethoxy)benzoate, the reaction agent that Katsuyuki teaches in this step is ammonium formate. In contrast, Applicants disclose the combination of an orthoformic ester and ammonium acetate as reaction agents in this step. The examiner attempts to cure Katsuyuki's deficiency by stating that Katsuyuki, in the genus disclosure, teaches ammonium formate as a versatile reagent that serves as both a formic acid compound and ammonium carboxylate (source of necessary amine or ammonia base). See Office Action, page 6. Applicants respectfully submit that the examiner has an incorrect understanding of Katsuyuki's teaching. Applicants have carefully reviewed Katsuyuki's disclosure, i.e., the paragraphs cited by the examiner as well as the whole disclosure, and have not found such a teaching suggested by the examiner. There is no teaching or suggestion in Katsuyuki that combination of an orthoformic ester and ammonium acetate may be used as reaction agents in step 4.

Moreover, Applicants point out that utilization of an orthoformic ester and ammonium acetate in combination significantly improves the yield of 6,7-bis(2-methoxyethoxy)quinazolin-4-one in step 4. This improvement is demonstrated in Synthesis Example 4 of the specification. See pages 15-16 of the original specification. In the Synthesis Example 4, the conversion of ethyl 2-amino-4,5-(2-methoxyethoxy)benzoate to 6,7-bis(2-methoxyethoxy)quinazolin-4-one in step 4 was shown to have a high yield of 91%. In contrast, step 4 of Katsuyuki that employs ammonium formate in combination with formamide produces 6,7-bis(2-methoxyethoxy)quinazolin-4-one in a relatively low yield of 80.5%, compared to the claimed invention. See paragraph [0057], working example 9 in the English translation of Katsuyuki. In fact, Applicants have also presented this information in the original specification as background of the invention. See page 1 of the original specification. For the reasons discussed above, the improvement of the yield by using a distinctive combination of the reaction agents in step 4 of the claimed process apparently distinguish the claimed invention over Katsuyuki's teaching.

In addition, Applicants also submit that Wang and Scarborough do not cure the deficiency of Katsuyuki. Wang is directed to a step different from step 4 of the claimed process. Scarborough teaches a process for the preparation of substituted quinazolin-4-ones, wherein

ethyl orthoformate is used as the formic acid source for ring closure. Neither Wang nor Scarborough teaches the use of an orthoformic ester and ammonium acetate in combination in step 4, the reaction of converting ethyl 2-amino-4,5-(2-methoxyethoxy)benzoate to 6,7-bis(2-methoxyethoxy)quinazolin-4-one, to prepare the claimed product in a significantly high yield.

Dependent claims 7 and 8 are allowable at least by virtue of their dependency from one of the independent claims, but also because they are distinguishable over the prior art.

Accordingly, Applicants respectfully request that the examiner withdraw this rejection under 35 U.S.C. § 103(a).

V. Conclusion:

Applicants respectfully request reconsideration of this application and allowance of the pending claims in view of the above remarks. If, however, the Examiner deems that any issue remains after considering this response, the Examiner is invited to contact the undersigned attorney to expedite the prosecution and engage in a joint effort to work out a mutually satisfactory solution.

Except for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 19-2380. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,
NIXON PEABODY LLP

Date: April 15, 2009

/Jeffrey L. Costellia, Reg. #35,483/
Jeffrey L. Costellia
Registration No. 35,483

NIXON PEABODY LLP
Suite 900, 401 9th Street, N.W.
Washington, D.C. 20004-2128
(202) 585-8000